

Serial No.: 10/790,621

Page 2 of 7

**LISTING OF THE CLAIMS**

Please consider the claims as follows:

1-8. (canceled).

9. (previously presented) A method of temperature stabilization of a wavelength of a laser, comprising:

measuring a representative temperature of the laser;

measuring the wavelength using an internal etalon of the wavelength;

defining a correction factor for the etalon using an external meter of the wavelength; and

operating a module defining the representative temperature at a set point corresponding to a generation of an optical power at a wavelength equal to a sum of the wavelength measured using the internal etalon and the correction factor;

wherein the correction factor is defined using a method, comprising:

(a) measuring the wavelength of the laser using the internal etalon;

(b) measuring the wavelength of the laser using the external meter;

(c) measuring the representative temperature;

(d) modifying a bias current of a laser chip of the laser;

(e) adjusting the representative temperature until the external meter measures the same wavelength as at the step (b);

(f) defining a difference in the representative temperature at the steps (c) and (e); and

(g) measuring the wavelength using the internal etalon.

10. (currently amended) A method of temperature stabilization of a wavelength of a laser, comprising:

measuring a representative temperature of the laser;

measuring the wavelength using an internal etalon of the wavelength;

Serial No.: 10/790,621

Page 3 of 7

defining a correction factor for the etalon using an external meter of the wavelength; and

operating a module defining the representative temperature at a set point corresponding to a generation of an optical power at a wavelength equal to a sum of the wavelength measured using the internal etalon and the correction factor;

wherein the laser assembly comprises:

a laser chip disposed on a submount;

the internal etalon disposed on the submount;

the module controlling a temperature of the laser chip and the ~~first~~internal etalon;

a temperature sensor;

a photodetector of an optical signal proportional to a laser output power at an input of the internal etalon; and

a photodetector of an optical signal proportional to the laser output power at an output of the internal etalon.

11-17. (canceled).

18. (previously presented) The method of claim 9 wherein the wavelength of the laser is measured using the external meter prior to operating the laser in an optical transmission system.

19. (previously presented) The method of claim 9 wherein the correction factor is defined prior to operating the laser in an optical transmission system.

20. (previously presented) The method of claim 9 wherein the representative temperature is a temperature selected from the group consisting of a temperature of a laser chip of the laser, temperature of the internal etalon, a temperature of the module, a temperature of a submount housing the laser chip

Serial No.: 10/790,621

Page 4 of 7

and the internal etalon, and a temperature of a medium between the laser chip, the internal etalon, and the module.

21. (previously presented) The method of claim 9 wherein the module comprises a thermoelectric cooler/heater.

22. (previously presented) The method of claim 9 wherein the representative temperature is measured using a thermistor or a thermocouple.

23. (previously presented) The method of claim 9 wherein an accuracy of the external meter is equal or greater the accuracy of the internal etalon.

24. (previously presented) The method of claim 9 wherein the internal etalon measures the wavelength using a method, comprising:

defining a ratio between a first electrical signal proportional to the output power at an input of the internal etalon and a second electrical signal proportional to the output power at an output of the internal etalon.

25. (previously presented) The method of claim 10 wherein the wavelength of the laser is measured using the external meter prior to operating the laser in an optical transmission system.

26. (previously presented) The method of claim 10 wherein the correction factor is defined prior to operating the laser in an optical transmission system.

27. (previously presented) The method of claim 10 wherein the representative temperature is a temperature selected from the group consisting of a temperature of a laser chip of the laser, temperature of the internal etalon, a temperature of the module, a temperature of a submount housing the laser chip and the internal etalon, and a temperature of a medium between the laser chip, the internal etalon, and the module.

Serial No.: 10/790,621  
Page 5 of 7

28. (previously presented) The method of claim 10 wherein the module comprises a thermoelectric cooler/heater.
29. (previously presented) The method of claim 10 wherein the representative temperature is measured using a thermistor or a thermocouple.
30. (previously presented) The method of claim 10 wherein an accuracy of the external meter is equal or greater the accuracy of the internal etalon.
31. (previously presented) The method of claim 10 wherein the internal etalon measures the wavelength using a method, comprising:  
defining of a ratio between a first electrical signal proportional to the output power at an input of the internal etalon and a second electrical signal proportional to the output power at an output of the internal etalon.